

AMENDMENTS TO THE CLAIMS

Please amend claim 9, 12, 15 and 16 to read as follows:

1. (Original) A refrigerator unit characterized by comprising:
means, which is provided between a power source and a motor for driving an intake/exhaust valve managing an intake/exhaust cycle time of a refrigerator unit, for varying a frequency of the motor for driving the intake/exhaust valve;
a temperature sensor for detecting a temperature of a thermal load unit of the refrigerator unit; and
a controller for controlling the means for varying the frequency of the motor for driving the intake/exhaust valve in accordance with an output signal of the temperature sensor.
2. (Original) A cryopump characterized by comprising the refrigerator unit according to claim 1.
3. (Original) A cryogenic refrigerator characterized by using a compressor unit comprising:
means, which is provided between a power source and a compressor main body motor of the compressor unit, for varying a frequency of the compressor main body motor;
a high pressure sensor attached to a high pressure refrigerant pipe connecting an outlet of the compressor main body with a refrigerant supply port of the refrigerator unit;
a low pressure sensor attached to a low pressure refrigerant pipe connecting an inlet of the compressor main body with a refrigerant discharge outlet of the refrigerator unit;
a controller for controlling the means for varying the frequency of the compressor main body motor in accordance with output signals of the high pressure sensor and the low pressure sensor, and
characterized in that a plurality of the refrigerator units according to claim 1 and one or more of the compressor units constitute the cryogenic refrigerator.
4. (Original) A cryogenic refrigerator characterized by using a compressor unit comprising:
means, which is provided between a power source and a compressor main body motor of the compressor unit, for varying a frequency of the compressor main body motor;

a differential pressure sensor provided between a high pressure refrigerant pipe connecting an outlet of the compressor main body with a refrigerant supply port of the refrigerator unit and a low pressure refrigerant pipe connecting an inlet of the compressor main body with a refrigerant discharge outlet of the refrigerator unit;

a controller for controlling the means for varying the frequency of the compressor main body motor in accordance with an output signal of the differential pressure sensor, and

characterized in that a plurality of the refrigerator units according to claim 1 and one or more of the compressor units constitute the cryogenic refrigerator.

5. (Previously Amended) A cryopump characterized by comprising the cryogenic refrigerator according to claim 3 or 4.

6. (Original) The cryopump according to claim 5, comprising:

a temperature sensor for detecting a temperature at any optional position of a cryopanel of the cryopump; and

a controller for controlling the means for varying the frequency of the motor driving the intake/exhaust valve managing the intake/exhaust cycle time of the refrigerator unit in accordance with an output of the temperature sensor.

7. (Original) A superconductive magnet characterized by comprising the refrigerator unit according to claim 1.

8. (Previously Amended) A super conductive magnet characterized by comprising the cryogenic refrigerator according to claim 3 or 4.

9. (Currently Amended) The superconductive magnet according to claim 7 or 8, comprising:

a temperature sensor for detecting a temperature of any optional position of the superconductive magnet; and

a controller for controlling the means for varying the frequency of the motor driving the intake/exhaust valve managing the intake/exhaust cycle time of the refrigerator unit in accordance with an output of the temperature sensor.

10. (Original) A cryogenic measuring apparatus characterized by comprising the refrigerator unit according to claim 1.

11. (Previously Amended) A cryogenic measuring apparatus characterized by comprising the cryogenic refrigerator according to claim 3 or 4.

12. (Currently Amended) The cryogenic measuring apparatus according to claim 10 or 11, characterized by comprising

a temperature sensor for detecting a temperature of any optional position of the cryogenic measuring apparatus; and

a controller for controlling the means for varying the frequency of the motor driving the intake/exhaust valve managing the intake/exhaust cycle time of the refrigerator unit in accordance with an output of the temperature sensor.

13. (Original) A simple liquefaction apparatus characterized by comprising the refrigerator unit according to claim 1.

14. (Previously Amended) Currently Amended) A simple liquefaction apparatus characterized by comprising the cryogenic refrigerator according to claim 3 or 4.

15. (Currently Amended) The simple liquefaction apparatus according to claim 13 or 14, comprising:

a temperature sensor for detecting a temperature of any optional position of the simple liquefaction apparatus; and

a controller for controlling the means for varying the frequency of the motor driving the intake/exhaust valve managing the intake/exhaust cycle time of the refrigerator unit in accordance with an output of the temperature sensor

16. (Currently Amended) The simple liquefaction apparatus according to claim 13 or 14, comprising:

liquid-level detecting means within a liquid storage container of the simple liquefaction apparatus; and

a controller for controlling means for varying a frequency of a motor driving an intake/exhaust valve managing a intake/exhaust cycle time of a refrigerator unit in accordance with an output of the liquid-level detecting means.